Outdoor Recreation as a Potential Lever for Health Improvement: A Review of the Health Benefits, Barriers and Opportunities for the Sector

Other

OUTDOOR RECREATION AS A POTENTIAL LEVER FOR HEALTH IMPROVEMENT: A REVIEW OF THE HEALTH BENEFITS, BARRIERS AND OPPORTUNITIES FOR THE SECTOR

PRODUCED BY

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INTRODUCTION

In accordance with *Reconomics Plus* (Sport and Recreation Alliance, 2017 forthcoming), this narrative literature review conceptualises outdoor recreation as the "*physical activities which take place in the natural environment*" (Comley and Mackintosh, 2015, p, 7). This excludes sports such as rugby and golf that take place on purpose built outdoor pitches, but, does include "purpose-built settings, for example canoeing, skiing and climbing which have their roots in the great outdoors and [are] predominantly reliant on the natural environment" (*Getting Active Outdoors*, 2015, p. 12). The location of these activities that inform the inclusion criteria were green spaces and urban green spaces, public open space, open spaces and parks. These were "*not just green spaces but also concrete*" (*Getting Active Outdoors*, 2015, p.12). In this review the terms green spaces and public open spaces were used interchangeably and presumed to be synonymous.

> *'When valued simply as an amenity, nature can be easily replaced by greater technological achievement; when viewed as an essential bond between humans and other living things, the natural environment has no substitutes'*
>
> (Kaplan & Kaplan, 1989, p. 204).

METHODOLOGY

Utilisation of a narrative review of the scholarly literature (Baumeister & Leary, 1997) has enabled the aggregation of peer-reviewed, rigorous, relevant and high-quality quantitative and qualitative studies, and the development of a timely 'state of play' of the field of outdoor recreation. Adoption of a critical realist ontology (Bhaskar, 2008) allows a cross-discipline, mixed-methods approach. It also facilitates the recognition of value of both empiricist, quantitative studies, and the rich, in-depth analysis of qualitative studies which together act to inform, and strengthen, research outcomes: '*literature reviewers are obligated to attend to the methodological diversity, and not just the quantity, of evidence'* (Baumeister & Leary, 1997, p. 316). In this study, major academic search tools (e.g. SCOPUS) were utilised and key search terms around outdoor recreation 'social outcomes' and 'health' and 'health outcomes'. Further cross analysis was undertaken using Manchester Metropolitan University Library databases and the resultant bibliography resulted in a sample of 125 references being used in this narrative review. Unlike a systematic review this is not meant to provide a definitive 'truth' but offer a set of synthesised consolidated perspectives on a core set of research goals. Articles were excluded by the research team from the study if they did not have a core focus on the central research questions established by the Sport and Recreation Alliance internal brief (Sport and Recreation Alliance, 2016a).

There was also flexibility for some grey literature such as policy documents and wider agency reports if they were deemed suitably robust by the review team and of relevance. However, the main focus remained the academic body of knowledge in this field. No time limits per se were placed on the study, given the long-held perspectives, evidence base and research dimensions of this field. This was in part due to the fact that the study was exploratory in nature and aimed at being innovative in nature in a complex area of policy implementation. Further examination of the methodological reach of this narrative review is beyond the scope of this report. Essentially it draws on a need to develop a 'state of play' thematic overview of the field based around the core brief and research question assessing the opportunities, barriers and value in health terms of the outdoor recreation sector (as defined by *Reconomics*, 2014 and the Sport and Recreation Alliance).

OVERVIEW OF OUTDOOR RECREATION

Outdoor recreation carries significant emotional, mental, and physical benefits, regardless of level, type, duration or intensity (Pretty et. al., 2003, 2005, 2007; Morris, 2003; Pacione, 2003), with nature creating feelings of happiness (Mäler et. al., 2008) emotional wellbeing (Kuo & Sulivan, 2001), mental as well as physical fitness (Scully et. Al., 1999; Rubinstein, 1997; Takano et. al., 2002), self-esteem (Pretty et. Al., 2007), a reduction of mental stress (Pretty et. al., 2004; Ulrich, 1999; Laumann, 2003; Grahn & Stigsdotter, 2003), mindfulness and calm (Brymer, Davids & Mallabon, 2014), a decreased risk of mental illness (de Vries et. al., 2003), less frustration and greater work satisfaction (Tennesen & Cimprich, 1995).

In addition to these economic, financial and psychosocial benefits, outdoor recreation also leads to reductions in anger, confusion, depression and anxiety (Pretty et. al., 2003, 2005), a reduction in mental fatigue (de Vries et. al., 2003), better sleep (Astell-Burt, Feng & Kolt, 2013), faster recovery from illness even with low-level exposure to nature (e.g. recovery from illness in a room with windows as opposed to one without: Ulrich, 1984) and cognition (Shafer & Richards, 1974). Exposure to nature has even been found to reduce crime and aggression (Kuo & Sullivan, 2001) and interestingly, seems to act most powerfully as an intervention for socially disadvantaged groups (Nieuwenhuijsen, Kruize & Gidlow, 2016). In a study by Rogerson et. al., (2015), for example, a single bout of green exercise was found to lead to an 18.4% decrease in stress, and a 14.2% increase in mood (p. 176).

A total of 75% of the European population, however, now live in urban environments that demonstrate a significant lack of green[1] and blue[2] space (Thompson et. Al., 2011). Exercising in an urban

[1] (green, grass-based space such as parks)
[2] Water-based nature such as lakes

environment offers the utilisation of gyms, but adherence remains poor – 40-50% of gym goers cancel their membership within a year (Bird, 2004): '*Exercising in traditional gyms incurs an extremely low adherence rate, due in part to what has been dubbed 'lycraphobia'* '(Mind, 2007, p. 29). Further, gym goers did not experience the feelings of tranquillity and enjoyment that outdoor exercisers did. Similarly, in a Mind (2007) research study, whilst 90% of respondents reported increases in self-esteem following a green walk, 44.5% reported a decrease in mood following an indoor (shopping centre-based) walk. Outdoor exercisers are also more likely to repeat the experience of walking if undertaken in an outdoor environment (Plante et. Al., 2003, Plante et. Al., 2006, Plante et. Al., 2007).

Scholarly work surrounding the concept of green and blue spaces, ecotherapy and the benefits of outdoor recreation provide a strong argument for outdoor exercise in that it carries benefits that indoor exercise seemingly cannot provide (Thompson et. Al., 2011) - particularly in the context of mental restoration and stress reduction (Bodin & Hartig, 2003; Thompson et al., 2011; Pretty, Peacock & Sellens, 2005). Immersion in nature carries significant and seemingly unique benefits (Nieuwenhuijsen, Kruize & Gidlow, 2016). These benefits could carry significant economic benefits to the UK economy: 93% of GP's have prescribed anti-depressants due to a lack of alternative treatments (Hairon, 2006), which carries a strong financial burden for the NHS. Yet research identifies the fact that supervised exercise programmes can be as effective as antidepressant medication in treating mild to moderate depression (e.g. Halliwell, 2005), meaning that a greater implementation of nature-based recreation would ease the financial burden currently visited by depression on the NHS. Perhaps unsurprisingly, the concept of nature as a clinically valid intervention in ill-health – an approach referred to as *ecotherapy* (Mind, 2007; Clinebell, 2013) – continues to gain traction.

Outdoor, nature-based recreation and exercise certainly represents a compelling resource if one considers that the cost of stress to the UK economy stood at £6.8bn in 2014[3], with ACAS figures reporting that mental ill-health (including stress, depression and anxiety) caused 91 million lost working days each year, with sickness absence costing £8.4 billion each year, £15.1 billion loss in reduced productivity, and £2.4 billion in the cost of replacing lost staff, with current estimates of the cost to UK employers of mental ill-health standing at £30 billion per annum[4].

Depression has been referred to as a 'global crisis' and as the second greatest cause of illness by 2020 (World Health Organisation: 2012), with stress-related illnesses set to rise further so the need for cost-effective interventions that effectively target stress remain paramount. Further, much research (e.g.

[3] Jones, R., 17th September, 2015: Work Related Stress Costs UK Economy Nearly £6.5bn each year. Accessed on 21/11/2016 at http://recruitmentbuzz.co.uk/work-related-stress-costs-uk-economy-nearly-6-5bn-each-year/
[4] Mental Health in the Workplace is Costing UK Employers Billions. ACAS. Accessed on 20/11/2016 at http://www.acas.org.uk/index.aspx?articleid=3915

BHF[5]) identifies the potential for multi-billion-pound savings by the NHS if increases in outdoor exercise, such as walking and cycling, can be achieved.

[5] British Heart Foundation: The Economic Costs of Inactivity. Accessed 18/11/2016 at http://www.bhfactive.org.uk/userfiles/Documents/eonomiccosts.pdf)

FINDINGS

EXERCISING IN NATURE: A UNIQUE RESOURCE

The idea that nature carries a synergistic benefit to exercise has been explored at some length in the emerging body of literature that represents the field of 'green exercise' (e.g. Pretty et. al., 2007, 2005, 2003), with the emotional impact of green exercise contributing positively to physical health benefits and previously mentioned concepts such as self-esteem that are linked to mental health (e.g. Pretty et. al., 2005). Green exercise can be conceptualised as '*physical activity with a simultaneous exposure to nature'* (Rogerson et. al., 2015) and represents a modern-day exploration and appreciation of the enervating effects of nature-based recreation on the mental and physical wellbeing of man.

EVOLUTIONARY BENEFITS

The idea of nature as a protector of health can be traced back to ancient times (e.g. Ulrich & Parsons, 1992). Exercising in nature, as viewed from a psycho-evolutionary or anthropological perspective (Godbey, 2009), pre-disposes us to '*positive psychological responses to nature environments'* (Rogerson et. al., p. 178; also, see Ulrich, 1993), particularly those features that remain central to the survival of the species (Gullone, 2000).

From an evolutionary perspective, it is possible that humans possess '*an innate affiliation with nature'* (Gladwell et. al., 2013, p. 2; Wilson, 1984) that leads to positive emotional outcomes when we engage with it. Indeed, emerging research across a range of fields identifies statistically the powerful effects that nature can exert on the behaviour of man (e.g. the negative effect of geomagnetic storms on financial markets trading: Krivelyova & Robotti, 2003).

It has been theorised that the disconnection of modern man to his natural environment has played a major role in the onset of many preventable modern diseases (e.g. Nesse & Williams, 1996), with excessive exposure to artificial, man-made environments (such as busy city centres, commuting) leading to aggression and violent acts (Kuo & Sullivan, 2001).

Effects of nature on man's health are powerful and acute (e.g. green exercise can provide '*significant improvements in acute psychological wellbeing'* (Rogerson et. al., 2015, p. 177; Nisbet, Zelenski, & Murphy, 2009) and provide an antidote to the stress, aggression and other anti-social behaviours caused by stressful, man-made physical environments (e.g. Kaplan, 1995).

Whilst investment in outdoor recreation (as a means of promoting health) has led to a greater appreciation of cycling, walking and other outdoor pursuits, the utilisation of green space and nature as a valuable health-based resource is still underused, despite its accessible and cost-effective properties:

> *[green spaces] are an underused asset. They are often poorly maintained, disconnected, difficult to reach and perceived as unsafe. As a result, millions of people are unwilling or unable to walk in the green spaces on their doorstep'*
>
> - (NUFU, 2002, p. 1).

'GREEN EXERCISE'

Whilst the field of green exercise has only emerged relatively recently in the academic literature (e.g. Pretty et. al., 2003, 2005, 2007), it has already been found to offer '*an upstream health and wellbeing promotion intervention*' (Rogerson et. al., 2016, p. 171)[6], which includes a range of statistically significant improvements in physiological, psychological, social and biochemical outcomes (MacArthur, 2002, Gordon & Grant, 1997) superior to those achievable via the use of indoor exercise (e.g. Gladwell et. al., 2013).

Green exercise differs from indoor exercise in several ways, including the idea of nature as an escape from everyday life (Gladwell et. al., 2013), and as a provider of restoration (e.g. from mental fatigue; Herzog et. al., 2003, 2007). It is perhaps more enjoyable and easier too, for many participants; some studies have shown that exercising in the outdoors feels easier to participants than if they were to perform the same exercise indoors (Focht, 2009), possibly because of the diverting and attractive features of a green setting (Akers et. al., 2012) and the idea of nature-based recreation as escape and refreshment (Morris, 2003).

Exercising in nature also mediates the frequency with which participants choose to engage in exercise, with the restorative properties of nature cited as a reason for more frequent participation (Bowler et. al., 2010) alongside improvements in mood (Peacock et. al., 2007, Barton & Pretty, 2010, Pretty et. al., 2005). Interestingly, the greatest improvements on mood and self-esteem appear to emerge in the first 5 minutes of green exercise (Barton & Pretty, 2010), with long and short-term benefits observed (Gladwell et. Al., 2013) with exposure to green exercise for short periods. Conversely, a failure to engage with nature on any level (e.g. a child living on an inner-city estate) has been named '*nature*

[6] An 'upstream' intervention is one which acts as a preventative measure to avoid the onset of health issues (such as obesity or depression) that might otherwise occur without the individuals' participation.

deficit disorder' (Louv, 2005) leading to an upswing in the potential for greater levels of stress, anxiety, depression and other mood disturbances (alongside obesity) to occur.

The role of green exercise (exercising whilst being exposed to nature) in health is significant (Park et. Al., 2010; Barton & Pretty, 2010; Barton, Griffin & Pretty, 2012), with natural environments providing a means of relaxation and reducing stress as a natural by-product of the experience (Li, 2010). According to a recent systematic review, it also offers more mental benefits than indoor exercise (Thompson et. al., 2011).

EXERCISE AS RESTORATION IN URBAN ENVIRONMENTS

> *'natural settings and stimuli such as landscapes and animals seem to effortlessly engage our attention, allowing us to attend without paying attention.'*
>
> *(Kuo & Sulliva, 2001, p. 545).*

Research identifies the restorative role of nature (Gladwell et. al., 2013; Herzog et. al., 2003, 2008; Kaplan & Kaplan, 1989), with outdoor exercise referred to as a '*useful natural medicine'* (Gladwell et. al., 2013, p. 5) that promotes happiness (Sugiyama et. al., 2008), which carries the potential to provide positive emotional regulation (Korpela & Ylén, 2009), to alleviate stress, and allow emotional stress-recovery to occur (Bowler, Buyung-Ali, Knight & Pullin, 2010; Korpela, 2014), partly via the use of rehabilitative intervention programmes such as gardening on depressed patients (e.g. Gonzalez et. al., 2011).

A recent meta-analysis (Bowler et. al., 2010) comparing urban v natural environments reported that the strongest restorative outcome of nature-based exercise was wellbeing, and a decrease in negative feelings such as sadness and anxiety. This supported the findings of previous research that also found greater positive changes in a wide range of behaviours associated with emotional wellbeing following nature-based (as opposed to non-nature-based) exercise (e.g. Ryan et. al., 2010, Berman, Jonides & Kaplan, 2008, Korpela et. al., 2014). These findings reflect a growth in interest in the field of environmental psychology, which adopts 'restoration perspectives' on the use of nature in restoring mental, physical and emotional health.

The restorative properties for urban dwellers appears striking if one considers a rather seminal body of work conducted by Ulrich (e.g. 1979, 1981, 1984, 1991, 2002) who considers that the viewing of natural scenes goes far beyond an aesthetic appreciation to concrete improvements in stress and emotional wellbeing. Interestingly, many authors discuss that nature-based scenes carry such a strong

psychological impact that simply viewing photographs of nature can alleviate stress (e.g. Morris, 2003; Ulrich, 1984, Kaplan, 1992, Ulrich & Parsons, 1992, White & Heerwagen, 1998).

As observed by Korpela et. al. (2014), walking in the outdoors, as opposed to indoors, '*produces greater physiological changes toward relaxation, greater changes to positive emotions and vitality, and faster recovery of attention-demanding cognitive performances'* (Korpela et. al, 2014, p. 2). In fact, it is perhaps restoration, as opposed to exercise itself that provides the greatest benefits of outdoor exercise. As stated by Korpela et. Al., (2014, p. 5),

> '*the present result refers to the importance of experiencing everyday calmness, getting new spirit and vitality for the everyday routines, forgetting everyday worries, clarifying one's thoughts*' and signifies the importance of moving '*away from physical exercise per se in population groups who are inactive or insensitive to exercise prescriptions'* (p. 5).

Such an observation holds with conceptualisations of outdoor-exercisers as 'recreationists' for whom the experience of being outdoors dominates. Outdoor exercisers can benefit from exercise, whilst also relaxing in nature, enjoying the aesthetic beauty of their surroundings, and partaking of the physical benefits such as fresh air and an escape from everyday life (Barton et. al., 2009, Hammitt, 2000 – also see Hatig et. Al., 1991 – *restorative environments theory*). As stated by Morris, 2003 (p. 18):

> *'Outdoor recreation and, in particular, walking is a multi-sensual and stimulating experience which frees the mind and generates reflexivity, philosophical and intellectual thought, aesthetic contemplation and opens up a more 'natural' self'* (Morris, 2003, p. 18).

Taking a purely biochemical view, outdoor exercise, or recreation, has been shown to decrease blood pressure, stress, heart rate and negative psychological states such as anxiety or low self-esteem (e.g. Song et. al., 2016). The literature in this area is, in fact, vast (e.g. Moore, 1981, Hartig et. al., 1991, Frunkin, 2001, Godbey, 2009, Thompson et al., 2011).

It appears that the superior mood-based outcomes of outdoor, or green, exercise may be facilitated by the synergy between exposure to the pleasurable aspects of nature itself (e.g. the aesthetics of a mountain path, meeting wildlife such as squirrels) and the biochemical outcomes of exercise (e.g. lowering cortisol; Orsega-Smith et. al., 2004).

OPPORTUNITIES OUTDOOR RECREATION FOR UNDER-REPRESENTED GROUPS - BME\BAME

The value of outdoor recreation for under-represented groups, those being disabled, Black and Minority Ethnic or Black, Asian and Minority Ethnic (BME\BAME), women and on low incomes is substantive across the literature (Burns et al., 2008; Mitchell, and Popham, 2008; Roe et al., 2016; *Getting Active Outdoors*, 2015; Thompson et al., 2011; Thompson and Aspinall, 2011). Disabled people perceive benefits of outdoor recreation in relation to physical health (Burns et al., 2008), psychological health and their empowerment as a disabled person (Burns and Graefe, 2008; Burns, et al., 2009; Freudenberg and Arlinghaus, 2009). Women perceived benefits in relation to physical and psychological health, escapism, gaining confidence and therapeutic relief from life commitments (Freeman et al., 2016). People on low incomes and who are located in disadvantaged communities benefit highly from outdoor recreation (Hanson and Jones, 2015) and have found value in opportunities for social inclusion, an increase in quality of life and heightened social interaction (Morris, 2003). What is apparent across the literature is that much further attention should be given to the value of outdoor recreation for BME\BAME people. Numerous studies recognise this, and are reviewed here.

Before exploring its value, it is important to outline how under-represented groups are conceptualised across the literature. BME\BAME is categorised within this review as people living within the United Kingdom of non-white descent. However, we recognise "*ethnic [and racial] identification is a subjective and multidimensional phenomenon*" that is consistently changing in our society (ONS, 2003, p.5). Therefore, this sort of data collection can be particularly difficult to collect because conceptualisations of BME\BAME groups vary considerably across studies (Hylton, 2009). Whilst this literature review utilises a standardised conceptualisation drawn from existing literature, we recognise the need for further research that examines more specifically subjective conceptualisations of BME\BAME within communities and its relationship to outdoor recreation. Comprehensive research examining only BME\BAME participation in outdoor recreation within the UK is limited. However, the Monitor of Engagement with the Natural Environment survey (MENE) (2013) shows that "*on average 24% of people in the BME population regularly visit the natural environment, compared to 38% of the rest of the population*" (*Natural England,* 2013) Furthermore, "*54% of visits taken by the BME population included an urban park, more than double the proportion for the rest of the population (21%) (Getting Active Outdoors: 2015, p. 62) and outdoor participants from BME population are more likely to have children at home*" (MENE, 2013).

Limited access to green and urban green space can impact on regular and sustained outdoor recreation amongst ethnic minorities (Mitchell and Popham, 2008; Roe et al., 2016; *Getting Active Outdoors*, 2015; Thompson et al., 2011). *Getting Active Outdoors* (2015) illustrates that "*BME and urban*

population groups tend to have low car access and are constrained by a lack of time. Furthermore, their visits tend to be near to home (69% of visits), in more urban locations and taken for more functional purposes". There are several additional barriers that BME\BAME face, that restrict their participation. These include the under-representation of BME\BAME people in outdoor spaces, limited awareness of existing activities, cultural perceptions, cost and lack of provision of culturally relevant recreation activities (*Getting Active Outdoors*, 2015, p. 28).

IMAGINED NOTIONS OF THE "GREAT OUTDOORS" – A ROLE FOR MARKETING OF 'PLACE' AND 'SPACE'

Perceptions of the under-representation of BME\BAME groups is commonly discussed across the literature. However, BME\BAME groups "are keen to access outdoor recreation once they have tasted the experiences" and when the restrictive barriers are removed (*Countryside Agency*, 2005, p. 1). For example, The Commission for Architecture and the Built Environment (CABE) report, *Community Green: Using Spaces for Tackle Inequality and Improve Health (2010)*, reveals that British Asian women are more likely to visit green spaces if they can find an area to be among other women of their own ethnicity. A common barrier apparent across the literature is the fear of safety (*Getting Active Outdoors* 2015; Morris, 2003). Mitchell and Popham (2008), and Agyeman & Spooner (1997) found that BME\BAME groups possessed negative perceptions of the outdoor environments and expressed fears of physical and verbal racial attacks. Given the increase in the level of reported and recorded Race hate crimes since the EU referendum (Corcoran and Smith, 2016), we need to address the safety of green and urban spaces in which outdoor recreation take place. BME\BAME are actively engaging in outdoor recreation, but political consideration must be given to reducing the likelihood of racial attacks towards BME\BAME groups within these spaces.

Studies also reveal the perceptions and use of green spaces for BME\BAME groups and its impact on their health. Notably, research by Roe et al., (2016, p. 1) shows that "*the quality of, access to and use of urban green space amongst ethnic groups was a significant predictor of general health for … mixed …BME group [s] with the poorest health*". In contrast, white participants with better quality and access to urban green space, experienced better health. Similarly, Thompson and Aspinall's (2011) research reveals that BME people living in Leicestershire have limited access to pursue recreation in publicly owned and managed urban green space and thus suffer from poorer overall health. Whilst the Indian population of Leicester stood out as having limited access to greenspace in the city, "*Indian respondents, followed by white British, were most likely to use greenspace for physical activity, and their general health and physical activity patterns were better than any other group"* (ibid). This correlates to the CABE (2010:42) report findings that also show "Indian, Bangladeshi and Pakistani people were more likely than other ethnicities to report visiting urban green space for exercise". It has

widely been recognised BAME people experience higher levels of poor health and health inequalities than majority groups (Marmot Review, 2010).

SOCIAL AND HEALTH BENEFITS - BME\BAME

The social value of public spaces for providing opportunities for "*socialising with others and everyday experiences of ethnic diversity"* has been highlighted extensively across the literature (CABE, 2010; Long et al., 2011, p.10). It supports processes of social inclusion, community cohesion and develop social connectedness (social capital) for BME\BAME groups (Long et al, 2011). Roe et al., (2016) found that urban green spaces are recognised as places where minorities can interact with the majority in a non-hierarchical way and address race relations. These encounters, as well as the identification with the surrounding environment, are critical factors in promoting social inclusion. Long et al., (2011) also argue that outdoor recreation promotes shared values, increases trust and encourages mutuality. Furthermore, it serves as bridge between segregated BME groups. Similarly, Mean and Tims (2005) found that spaces such as parks best supported sharing and exchange. Dines et al. (2006) also found that green spaces were associated with remedial value.

Research shows that it is important for BME\BAME groups to identify with outdoor spaces as areas for engagement in outdoor recreation, because they experience these spaces differently to majority groups (Rishbeth, 2001). For example, Lang (2007, p.52) found that a sense of belonging in open spaces facilitated walking amongst 150 Asian women in Lister Park in Bradford, suggesting that "*cultural symbolism with elements of an open space*" assists in aiding BME\BAME's willingness to engage in outdoor recreation. In summary, whilst features of the physical environment are beneficial, designated programmes of activity allowed BME\BAMEs groups to also express their ethnicity through the environment to facilitate recreation.

It has widely been recognised BAME people experience higher levels of poor health and health inequalities than majority groups (Marmot Review, 2010). Furthermore, limited access to green spaces, the built environment and associated problems of overcrowding have a profound impact on the health and wellbeing of BME\BAME groups (Rutter et al., 2007). Studies have sought to draw attention to the benefits outdoor recreation can have to overall health. For example, Pretty et al. (2003; as mentioned earlier) demonstrated that green exercise can improve mental wellbeing and are markers of physiological health. BME\BAME groups recognises this importance as the Getting Active Outdoors (2015, p.62) report shows that 32% of BME\BAME people stated that they visit parks for exercise and health-related reasons, or to play with children.

CONCLUSIONS

Scholarly literature indicates that investment in outdoor recreation offers a considerable opportunity for a meaningful return on investment, yet these benefits have remained largely untapped. Summarily, outdoor recreation deserves a far more visible place in the policy sphere.

It is well established that *'the benefits and pleasures of nature are valued highly on a personal level but these rewards have little influence in the policy area'* (Kaplan & Kaplan, 2003, cited in Morris, 2003, p. 12). This long-held view needs to be reviewed alongside the recent establishment of the recognition of the economic value of outdoor recreation (Comley and Mackintosh, 2014; Sport and Recreation Alliance, 2016) and the potential value to the health sector that it can provide.

Emotional wellbeing is a positive predictor of physical good health, and carries significant economic benefits that indoor exercise (e.g. in an indoor gym or health club) cannot offer. For example, many individuals fail to adhere to a gym programme over time, whereas adherence in Green Gym programmes was observed to be far more positive (e.g. Thompson et. Al., 2011, Morris, 2003, BTCV, 2002), and to also provide greater feelings of revitalisation and calmness.

Economic benefits of developing and utilising nature-based recreation programmes are extensive, and include increased opportunities employment, a more attractive location for companies to base their operations, rising real estate prices, greater general economic activity, and greater employee satisfaction and productivity (Morris, 2003) alongside the earlier-mentioned alleviation of £multi-billion costs to the NHS of inactivity and mental health illnesses. As stated by Pretty et. al., (2007), '*The NHS budget is several hundred times larger than the amount spent on conservati*on' (p. 227), yet the significant economic value of green space in promoting mental and physical health, whilst already acknowledged (e.g. Pretty, 2002, National Trust, 2003), appears to remain unexploited.

'Free play is free' - (Godbey, 2009, p. 11)

In times of economic distress (e.g. recession), utilisation of outdoor spaces (as opposed to indoor spaces such as gyms) for recreation increases (Knapp & Hartsor, 1979). Such a practice underscores the potentially far-ranging implications of a resource that is free for many to utilise, and which offers greater adherence to exercise in mainstream, hard-to-reach and at risk groups (Ward Thompson et. al., 2003, 2005, 2008, 2013). Given the fact that low involvement in physical activity in low income groups is often attributed to cost (e.g. Moore, 1996), outdoor recreation offers a potentially beneficial route to increasing exercise and exercise adherence levels across all sectors of the socio-economic spectrum.

Ultimately, given that the World Health Organisation (WHO) identify depression as the second greatest health issue on a global basis by 2020 (WHO, 2012), there has never been a more pertinent or economically efficacious time to exploit the benefits of nature-based exercise and recreation identified in the emergent bodies of scholarly work that constitute ecotherapy, green and blue space and outdoor recreation.

In summary, this literature review has established a synthesis of the potential health barriers, opportunities and scope for the outdoor recreation sector. This report is designed to be read as a standalone independent piece of research undertaken by Manchester Metropolitan University Sport Management Research Cluster for 'sport participation and social outcomes'. It should also be considered alongside wider work currently being undertaken by the Sport and Recreation Alliance in Reconomics Plus (Sport and Recreation Alliance, 2017), and as a follow up report to the Alliance's research evidence review undertaken by Comley and Mackintosh (2014) that supported two Parliamentary debates in the field of assessing the value of Outdoor Recreation in the UK in 2014-2016.

RECOMMENDATIONS

As stated by Pretty et. al., (2007), 'The NHS budget is several hundred times larger than the amount spent on conservation' (p. 227), yet the significant and unique economic and psychosocial value of green space in promoting mental and physical health, whilst already acknowledged (e.g. Pretty, 2003, 2005, 2007, National Trust, 2003), have, thus far, remained relatively unexploited. It is to these unique benefits, informed through scholarly review, that we will now turn – and which form the basis of the following recommendations:

1. Ecotherapy as an Economic Intervention

The cost of stress to the UK economy stood at £6.8bn in 2014, with ACAS figures reporting that mental ill-health (including stress, depression and anxiety) caused 91 million lost working days each year, with sickness absence costing £8.4 billion each year, £15.1 billion loss in reduced productivity, and £2.4 billion in the cost of replacing lost staff. Furthermore, current estimates of the cost to UK employers of mental ill-health standing at £30 billion per annum. Research also identifies the restorative role of nature (Gladwell et. al., 2013; Herzog et. al., 2003, 2008; Kaplan & Kaplan, 1989), with outdoor exercise referred to as a 'useful natural medicine' (Gladwell et. al., 2013, p.5) that promotes happiness (Sugiyama et. al., 2008), carries the potential to provide positive emotional regulation (Korpela & Ylén, 2009), alleviates stress, and allows emotional stress-recovery to occur (Bowler, Buyung-Ali, Knight & Pullin, 2010; Korpela, 2014). Amazingly, nature-based scenes carry such a strong psychological impact that simply viewing photographs of nature can alleviate stress (e.g. Morris, 2003; Ulrich, 1984, Kaplan, 1992, Ulrich & Parsons, 1992, White & Heerwagen, 1998). It is subsequently recommended that ecotherapy, or the use of nature-based recreation, is utilised in a far more systematic and coherent way if its economic benefits are to be maximised.

2. Green Exercise as an Upstream Intervention

Whilst the field of green exercise has only emerged relatively recently in the academic literature (e.g. Pretty et. al., 2003, 2005, 2007), it has already been found to offer 'an upstream health and wellbeing promotion intervention' (Rogerson et. al., 2016, p. 171), which includes a range of statistically significant improvements in physiological, psychological, social and biochemical outcomes (MacArthur, 2002, Gordon & Grant, 1997). The idea of nature as a protector of health can, in fact, be traced back to ancient times (e.g. Ulrich & Parsons, 1992). Exercising in nature, as viewed from a psycho-evolutionary or anthropological perspective (Godbey, 2009), pre-disposes us to 'positive psychological responses to nature environments' (Rogerson et. al., p. 178), particularly when it involves those features that remain central to the survival of the species (Gullone, 2000). It also carries significant

economic and psychosocial benefits that remain unique to the outdoor endeavour (Thompson et. al., 2011).

3. Free Play is Free

In times of economic distress (e.g. recession), utilisation of outdoor spaces (as opposed to indoor spaces such as gyms) for recreation increases (Knapp & Hartsor, 1979) due to its free and accessible nature: 'Free play is free' (Godbey, 2009, p. 11; Moore, 1996). Such a practice underscores the potentially far-ranging implications of a resource which not only offers greater adherence to exercise when compared to indoor, traditional exercise interventions, but manages to do so for mainstream, hard-to-reach and at risk groups (Ward Thompson et. al., 2003, 2005, 2008, 2013; Nieuwenhuijsen, Kruize & Gidlow, 2016). It also plays a valuable role in intervening in anti-social behaviour (e.g. in reducing crime and aggression; Kuo & Sullivan (2001) and subsequently deserves a far more prominent position in the public policy sphere.

4. Reframe Outdoor Exercise as Restorative Recreation

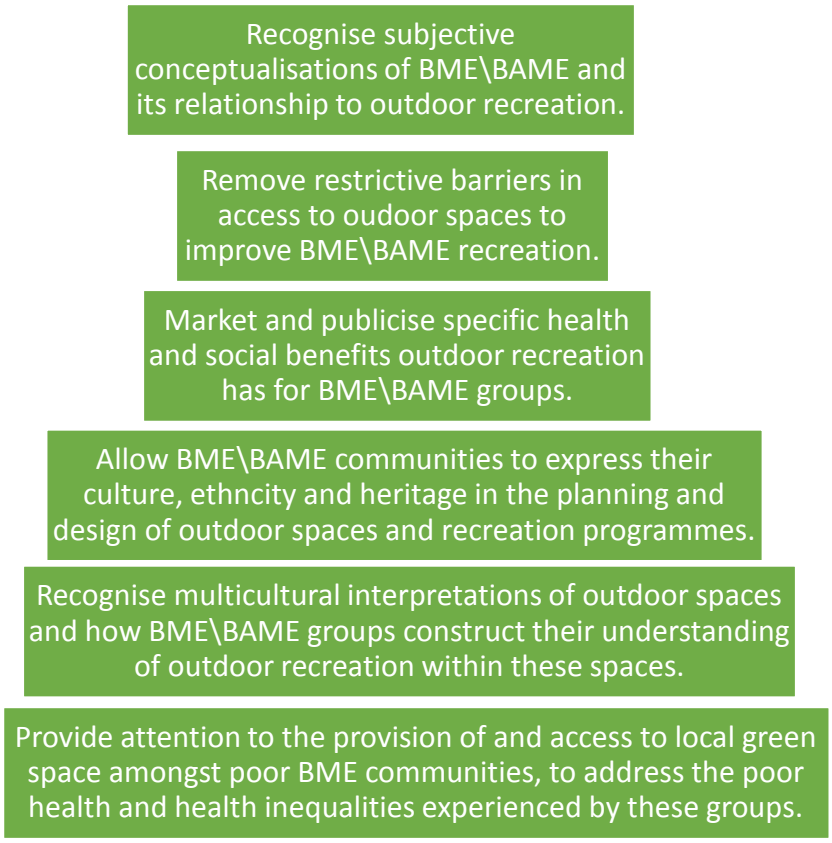
Outdoor exercisers can benefit from exercise, whilst also relaxing in nature, enjoying the aesthetic beauty of their surroundings, and partaking of the physical benefits such as fresh air and an escape from everyday life (Barton et. al., 2009, Hammitt, 2000), offering a move 'away from physical exercise per se in population groups who are inactive or insensitive to exercise prescriptions' (Korpela et. al., 2014, p. 5). As a result, it also leads to greater exercise adherence. Literature identifies emotional wellbeing as the strongest outcome of nature-based (as opposed to non-nature-based) exercise (e.g. Bowler et. al., 2010, Ryan et. al., 2010, Berman, Jonides & Kaplan, 2008, Korpela et. al., 2014), which may be attributable to the primary role of nature as a provider of aesthetic and stimulatory enjoyment, with the health-related benefits of exercise simply a component, or by-product. A key recommendation is therefore to move the discourse away from 'exercise' and to instead steer participants toward an enjoyment of the sensory and aesthetic pleasure of interacting with nature.

5. Directly address under-representation by BME/BAME communities in Outdoor recreation policy and practice

We recognise the need for further research that examines more specifically subjective conceptualisations of BME\BAME within communities and its relationship to outdoor recreation. We also acknowledge the need for UK health and recreation policy to afford greater consideration to the provision and access to local green space amongst poor BME communities, since this can play an important role in helping address the poor health and health inequalities experienced by these groups.

In light of these considerations, recommendations are to fully appreciate the need to engage with BME\BAME communities in the planning of green spaces and in the design of outdoor recreation programmes that recognise and express culture, ethnicity and heritage. We must also recognise the multicultural interpretations of outdoor spaces and how BME\BAME groups socially construct and encode their understanding of outdoor recreation within these spaces. Figure 1 illustrates a potential means of delivering this change in policy and practice based on best practice across the sport and health sector:

Figure 1 – Recommendations – (Under-represented groups – BME\BAME)



6. **Consider integration of outdoor recreation as a stream of therapeutic interventions with NHS healthcare commissioners with associated NICE guidelines**

As stated earlier by Pretty et. al., (2007), 'The NHS budget is several hundred times larger than the amount spent on conservation' (p. 227), yet the significant economic value of green space in promoting mental and physical health, whilst already acknowledged (e.g. Pretty, 2002, National Trust, 2003),

appears to remain vastly unexploited. It is subsequently recommended that nature-based interaction form a far more extensive part of public policy: 'the benefits and pleasures of nature are valued highly on a personal level but these rewards have little influence in the policy area' (Kaplan & Kaplan, 2003, cited in Morris, 2003, p. 12). Research to establish the NICE guidelines and potential pilot research work is subsequently recommended across different populations and activities.

The benefits of indoor exercise are clearly tremendous and impactful: however, in the context of restorative practice, outdoor recreation has been neglected which is reflected in the far greater adherence rates in some populations. As suggested in this report the complexity of this area is considerable and requires far greater acknowledgement through future research endeavour and collaboration by agencies across the sector.

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